used to look at, not gather, on the mountains are hopelessly eradicated; and they have to go to spots more fitted for the Alpine Club than the botanist, to see the rarer or more interesting species. Happily there are a few such spots to which no "tourist" is likely to attain, where our rare Ferns may perhaps be preserved for the gratification of a future generation, and from which, when the present fashion has passed away, they may spread to more accessible places on the hills.

Chart of Fossil Crustacea. By J. W. Salter and H. Woodward. *With Descriptive Catalogue.* Lowry & Tennant: London, 1865.

This is a large chart (2 feet 2 inches by 2 feet 9 inches) of the genera of fossil Crustacea, showing the range in time of the several orders, together with some recent Crustacean types analogous to the extinct forms. The Chart is divided transversely into fifteen zones of varying thickness, alternately dark and light, and corresponding to geological stages; and vertically, across these bands, are represented eight streams, varying in width and length, of Crustacean forms,—some (as the Trilobites and Eurypterids) beginning early and dying out in palæozoic times, others (as the Decapods, Tetradecapods, and Xiphosures) beginning either in the Devonian or the Carboniferous period and still flourishing; whilst the Brachyurous Decapods are first found in the Jurassic rocks. Among the lower groups of Crustacea, the little Bivalved Entomostraca seem to have had representatives for almost as long as fossiliferous strata take us back in time; for their "stream of history" ranges upwards from the chart's lowest band ("Cambrian" or "Lingula-flags"). The Cirripeds also are included in this conspectus of Crustacean life; and the Catalogue explains that though in the Chart they range only from the Rhætic strata upwards, yet good specimens of a trustworthy representative (*Turrilepas*) have of late been recognized by Mr. H. Woodward among Upper Silurian fossils; and woodcut figures are given at page 26.

The Chart fully answers the purpose proposed—supplying the carcinologist with an eye-sketch of the Crustacean types and subtypes, and enabling the palæontologist to see the coexistent forms at any epoch, and to trace at a glance the range of each group, whether occupying the stage at once in force, as in the case of the Trilobites and Eurypterids, or beginning with obscure traces or uncertain forms, and whether giving place to incoming allies or continuing in true succession to the present day. We need not wonder that the Chart is good, well-devised, and conscientiously worked out; for Mr. Salter is devoted to Trilobites, Palæocarids, *et hoc genus omne*, whilst Mr. H. Woodward is as fond as anybody of Crabs and Lobsters, Prawns, Shrimps, and "such small deer," not only in the fresh but in the fossil state; both also have made a study of the Eurypterids, and both have command of the goodwill and help of their brother palæontologists; while Mr. Lowry, the engraver, has long been known for the successful application of his art to geology and fossils, prompted by a genuine love of the science in all its branches.

To show the use of the Chart to the student, we cannot do better than adopt Mr. Salter's explanation, as given in the Introduction to the Catalogue:—

"This Chart is intended to show at a glance the development in geological time of the different orders of the class Crustacea. Pictorial representations of the different groups of fossils, in their geological order, have been often before attempted, and the 'Tabular View of British Fossils,' compiled and engraved by Mr. Lowry (published by the Society for Promoting Christian Knowledge), has been conspicuously useful in this way. But we do not know of any published Chart in which the relations of the different members of a family or group are preserved in an unbroken series, so as to show the course taken by that family or order of animals in the successive geologic periods, from their first appearance to the present time. It has been found practicable (due regard being had to size and shape of the sections of the Chart) to arrange the species nearly in their right natural-history order. This could not always be done, inasmuch as there are often members of the same genus in two geological divisions. It has been thought best, therefore, in the Catalogue, to follow the same order as that of the plate, that the student may the more easily, in studying each group, follow it from its commencement to its close. The rule followed is to take each group in ascending order, from its commencement in the lower strata to its close, or to modern times. The Chart shows through what length of time any genus existed; and it will be observed that comparatively few genera (except among the small Bivalve Crustacea) range through more than one or two formations. When it is otherwise, the student has only to look in the Chart, at the next overlying formation, for the members of the genus he is occupied with (and they are arranged as nearly together as the space and other circumstances will allow), and then, turning to the Catalogue, he will be conducted by it over all the genera peculiarly characteristic of the lower formation before proceeding to those of a higher one. Thus, for instance, in the group *Eurypterida* he will find, in the Lower Silurian, that only footmarks of a gigantic species are known; in the Upper Silurian, the *Hemiaspis* and *Bunodes* are confined to that formation, while the great *Pterygotus* and *Eurypterus* are figured as reaching through two formations. Consulting the Catalogue, he will find that *Pterygotus problematicus* is an Upper Silurian species, and that *P. anglicus*, a very similar form, belongs to the Devonian formation. Again, *Eurypterus tetragonophthalmus* is a Lower Devonian form; but the gigantic *E. Hibberti* belongs to the Carboniferous formation. One or two in the Coal close the series. Here, then, the range of each genus is extended through the formations to which it belongs. But, in this particular case only, the size of the animals is so great that, instead of figuring *P. anglicus* and *P. problematicus* one exactly over the other, a single large figure is made to do duty for both. In all other cases, as in the genus *Limulus* on the right hand of the chart, or the genus *Homalonotus* or *Calymene* among the Trilobites, the successive species are placed one over the other, and the range of the

whole genus in time is thus made evident. The student is recommended to take each group of animals as indicated by the curved or vertical lines of separation* by itself, as the object of the Chart is to show him how each tribe or order has been gradually developed and perfected, or otherwise, in its course. By taking, then, the genera and species belonging to the lowest formation first, he will the more readily see what changes have been introduced among a particular set of animals; and having made himself thus master of the separate groups, he will be able afterwards better to see their mutual relations."

Genera Plantarum: auctoribus G. Bentham et J. D. Hooker. Vol. i. Pars 2. London, 1865.

We have much pleasure in announcing the publication of another Part of this admirable work. It consists of 293 pages, and contains the genera included in the orders Leguminosæ, Rosaceæ, Saxifrageæ, Crassulaceæ, Droseraceæ, Hamamelideæ, Bruniaceæ, Haloragеæ, Rhizophoreæ, Combretaceæ, and Myrtaceæ; and we are informed that a third Part will complete the Polypetalous orders and the first volume. It is much to be desired that no great delay may attend its publication.

It is scarcely possible to give any idea of the amount of labour which has been expended upon this work, which must form a necessary part of the library of every botanist. We have looked rather hastily through the present part, and observe very few points requiring notice. In Leguminosæ the Genisteæ, Trifolieæ, and Loteæ are regarded as tribes of the Papilionaceæ, and of equal rank with Vicieæ and Hedyraceæ; and, amongst the genera, *Sarothamnus* is combined with *Cytisus*, *Arthrolobium* with *Ornithopus*, *Ervum* is joined to *Vicia*, and *Orobus* to *Lathyrus*. The order Rosaceæ is retained entire, notwithstanding the apparently epigynous structure of the Pomeæ. Amongst its genera, *Potentilla* includes *Sibbaldia*, *Agrimonia* includes *Aremonia*, *Poterium* includes *Sanguisorba*, *Pyrus* includes *Mespilus*. The Grossulariaceæ are combined with the Saxifrageæ, and also the genus *Parnassia*. The genus *Callitriche* is placed in Haloragеæ, but *Ceratophyllum* is considered to constitute a Monochlamydeous order.

There are many other alterations made in the usual mode of grouping, but we do not think it necessary to mention them. Those enumerated are of the most interest to the British botanist, as relating to the flora of his own country.

We have only to add that all botanists must feel anxious for the early continuation of this very useful work, and express our hope that its sale may be such as to encourage the learned authors to proceed as rapidly with its publication as they properly can.

* The groups may be made more distinct by colouring the lines by different paints or crayons.